

NEW SPECIES OF VERNONIEAE (ASTERACEAE). VII.

*CENTRATHERUM CARDENASII* FROM BOLIVIA

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Material of the genus *Centratherum* borrowed from the U.S. National Herbarium a number of years ago for a study of the genus, included a specimen from Bolivia collected in 1966 by the late Dr. H. M. Cardenas. The specimen had achenes that obviously never had any pappus, and the specimen was returned with indication that it was not a *Centratherum*. The close resemblance to species of that genus seemed to indicate close relationship, however. In view of the limited generic possibilities in this group of the Vernonieae, a study has been undertaken with the following results.

The Cardenas specimen has all the characteristics of the *Centratherinae*, including the outer series of foliaceous involucral bracts, the long-stipitate glands on the corollas, and the *Centratherum*-type pollen, a pollen with low crests as in the *Lychnophora*-type, but with spines arranged in a definite network enclosing numerous irregular areolae (Robinson, Bohlmann & King, 1980). The two known genera of the subtribe are *Centratherum* Cass. with a short readily deciduous pappus, and *Oiospermum* Less. with no pappus. The former is widely distributed in South America and occurs elsewhere, while the latter is restricted to eastern Brasil. The lack of pappus might suggest that the Bolivian specimen is a second species of *Oiospermum*, but the appearance of the specimen would dictate otherwise. Rigorous application of the traditional generic character seems unwise in view of the frequency with which the pappus is lost in various groups of Asteraceae.

The achenes of *Oiospermum* are notable for the fine indument of small distorted twin-hairs. The achenes of *Centratherum* are glabrous except for scattered glandular punctations, a condition also seen in the Cardenas specimen. The inner involucre of *Oiospermum* consists of glabrous bracts all being uniform in structure and differing only in size. In *Centratherum* the inner bracts are variously pubescent, and form a graduated series in which the apices of the innermost bear broad scarious margins, a situation also seen in the Cardenas specimen. The examples seen of *Oiospermum* show a style with the pubescent part of the upper shaft very short. In *Centratherum* and in the Cardenas specimen the pubescent part of the style shaft as half as long to nearly as long as the style branches. On the basis of the comparison, I would maintain the genus *Oiospermum* as distinct from *Centra-*

*therum*, but I consider the epappose Cardenas specimen as a member of the latter genus.

Within *Centratherum* the Cardenas specimen is distinct by the lack of pappus. Also, the leaves are densely covered with a pubescence of T-shaped hairs that nearly hides the glandular punctations, and the petioles and the bases of the outer involucral bracts are usually rather broad or winged, neither character being evident in other species of the genus. The Cardenas specimen is recognized here as a new species which is named for the collector.

*CENTRATHERUM CARDENASII* sp. nov., H. Robinson

Plantae herbaceae subperennes vel perennes? 30-40 cm altae pauce ramosae. Caules teretes dense canescentiter pilosulus vel subtomentosi, pilis plerumque sub-T-formibus vel T-formibus irregulariter distortis, internodis ca. 1.3-1.5 cm longis. Folia alterna, petiolis 5-8 mm longis vix vel distincte anguste alatis; laminae ellipticae vel obovatae plerumque 2-3 cm longae et 1.0-1.5 cm latae base acuminatae indistincte demarcatae margine serratae apice obtusae supra et subtus glandulo-punctatae et dense pilosulae, pilis T-formibus distincte stipitis, nervis secundariis utrinque ca. 5-6 ca. 45° divaricatis. Capitula subscaposa in internodis ultimis ca. 6 cm longis terminalia solitaria ca. 14 mm alta et lata; squamae involucris exteriores ca. 10 foliiformes 5-20 mm longae et 5-9 mm latae ovatae vel obovatae base late insertae margine integrae vel subserrulatae dense glandulo-punctatae et pilosulae; squamae interiores ca. 30 ca. 2-3-seriatae ovatae vel lanceolatae 3-7 mm longae et ca. 2.5 mm latae extus in partibus subherbaceis dense puberulae exteriores breviter acutae interiores in appendicibus apicalibus late scariosis margine serrulatis purpureae. Flores ca. 50 in capitulo; corollae purpurascens aliquantum firmae ca. 12 mm longae, tubis cylindraceis ca. 7 mm longis glandulis longi-stipitatis dense obsitis et pauce glandulo-punctatis, faucibus anguste infundibularibus ca. 2.5 mm longis glandulo-punctatis et pauce vel non stipitato-glanduliferis, lobis linearibus ca. 3 mm longis et 0.4 mm latis extus glandulo-punctatis et sparse stipitato-glanduliferis; filamenta antherarum in partibus superioribus ca. 0.35 mm longis, cellulis in parietibus valde annulate ornatis; thecae antherarum ca. 1.5 mm longae; appendices antherarum oblongo-ovatae breviter acutae ca. 0.5 mm longae et 0.18 mm latae; basi stylorum non noduliferi; scapi stylorum in partibus hispidulis superioribus ca. 0.7 mm longi, rami stylorum ca. 1.4 mm longi. Achaenia 2.2-2.8 mm longa subteretes ca. 10-costata sparse glandulo-punctata non pilifera; pappus nullus. Grana pollinis in diametro ca. 40  $\mu$ m.

TYPE: BOLIVIA: Santa Cruz: San Miserato-Chiquitos, 900 m, en pendiente de gramineas. Herb 30-40 cm, flowers purpurae. V-66. *M. Cardenas 6253* (Holotype, US).



*Centratherum cardenasii* H. Robinson, Holotype, United States National Herbarium. Photo by Victor E. Krantz, Staff Photographer, National Museum of Natural History.

#### Literature Cited

Robinson, H., F. Bohlmann and R. M. King 1980. Chemosystematic notes of the Asteraceae. III. Natural subdivisions of the Vernoniaeae. *Phytologia* 46 (7): 421-436.